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EXAMINER

ALEJANDRO, RAYMOND

ART UNIT	PAPER NUMBER
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1745

DATE MAILED: 10/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/069,001

Applicant(s)

SAWADA ET AL.

Examiner

Raymond Alejandro

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,5,8,9,14,16,25-27,30 and 31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,5,8,9,14,16,25-27,30 and 31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 09/05/06 has been entered.

This document is in reply to the amendment filed in connection with the foregoing RCE. Applicant has overcome the prior art rejections. Refer to the above-mentioned amendment for substance of applicant's rebuttal arguments and remarks. Nevertheless, the present claims are rejected over newly discovered references for the reasons of record.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 27 and 30-31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
3. Claims 30-31 recite the limitation "*passive layer*" in lines 3 or 4. There is insufficient antecedent basis for this limitation in the claim.
4. Claim 27 is indefinite as it contains subject matter not related to the subject matter of claim 1 from which it depends from. For instance, claim 1 was amended to remove the limitation

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concerning “*a reaction product of an oxidizing reaction of the metal layer surface*” but claim 27 still recites anodic oxidation as an oxidative treatment. Since claim 1 no longer claims any oxidative treatment, the subject matter of claim 27 is indefinite.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1, 5, 14, 16, 25-27 and 30-31 are rejected under 35 U.S.C. 102(e) as being anticipated by Araki et al 2003/0194564.

The present application is directed to a laminate for sealing a battery electrolyte or electrode wherein the disclosed inventive concept comprises the specific laminate structure.

As to claims 1 and 30-31:

Araki et al disclose a laminated article (TITLE) formed by laminating a polymeric material (*the layer of an adhesive resin*) onto a substrate (*the metal layer*) (P0182). The polymeric resin is adhesive (ABSTRACT/P0056-0059, 0001, 0018, 0020, 0036-0037) The substrate is a metal such as aluminum (P0187-0190). Araki et al disclose that in order to further enhance adhesive property, metal surfaces may be subjected to chemical conversion treatment with acids (P0193), in particular, a substrate material on which an oxide film is formed by chemical conversion treatment with chromic or phosphoric acid (P0206). **Figures 4-13** illustrate

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multiple laminated articles. Of particular interest is the Araki et al's teaching that the polymeric resin may have a functional group such as carboxyl (P0077). **Preparation Example 5** exemplifies the use of carboxyl as functional group of the polymeric material. Thermo-compression bonding is disclosed (P0144). *Thus, Araki et al specifically name a carboxyl group. The specific adhesive strength is an inherent characteristic of the adhesive film. Since the substrate material is subjected to an acidic treatment, the resulting film formed thereon is in direct contact with the adhesive film.*

1st Examiner's note: *as to the specific preamble reciting "a laminate for sealing an electrolyte or protecting an electrode of a battery", it is pointed out that the preamble still refers to intended use. That is, the claim is directed to a laminate structure per se and the foregoing preamble phrase is only a statement of ultimate intended utility.*

As to claim 5:

As kinds of metallic material used in the laminated article: Al, Ni, Fe, Cu and alloys thereof (P0190).

As to claims 14 and 16:

As to the specific preamble reciting "a seal film for sealing an electrolyte of a battery or a protective film for protecting an electrode of a battery", it is pointed out that the preamble still refers to intended use. That is, the claim is directed to seal film comprising a laminated structure per se and the foregoing preamble phrase is only a statement of ultimate intended utility.

As to claims 25-26:

Disclosed is a substrate material on which an oxide film is formed by chemical conversion treatment with chromic or phosphoric acid (P0206).

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As to claim 27:

Anodic oxidation is also taught (P0192).

Therefore, the present claims are anticipated.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 1, 5, 8-9, 14, 16, 25-27 and 30-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daio et al 5156930 in view of Araki et al 2003/0194564.

As to claims 1, 14, 16 and 30-31:

Daio et al disclose a three layer construction comprising a metallic thin plate, a non-adhesion type resin film and a heat-adhesion type resin film used as an opening sealing device for a battery (TITLE/ABSTRACT/COL 1, lines 5-10 and 45-50). **FIGURE 8** illustrates the

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specific 3-layer construction (FIGURE 8/ COL 3, lines 1-7 and lines 61-67). The heat adhesion type polyolefin resin is made of a polyethylene and polypropylene and is modified by a carboxyl group (COL 6, lines 30-38 and 60-67/CLAIMS 2-4). The metallic thin plate is made of aluminum (COL 6, lines 60-62). *The specific adhesive strength is an inherent characteristic of the adhesive film. The sealing device of Daio et al serves the intended use of enclosing, sealing or protecting battery components such as electrode and/or electrolyte.*

1st Examiner's note: *as to the specific preamble reciting "a laminate for sealing an electrolyte or protecting an electrode of a battery", it is pointed out that the preamble still refers to intended use. That is, the claim is directed to a laminate structure per se and the foregoing preamble phrase is only a statement of ultimate intended utility.*

As to claim 5:

The metallic thin plate is made of aluminum (COL 6, lines 60-62).

As to claims 8-9:

The heat adhesion type polyolefin resin is made of a maleic anhydride polyethylene in which polyethylene is graft-polymerized with maleic acid (COL 6, lines 60-67). It is made such that unsaturated carboxylic acid having carboxyl group such as an acid is added to a non-polar resin such as polyethylene and polypropylene and copolymerization or graft-polymerization is performed therefor (COL 6, lines 30-38/CLAIMS 2-4).

Daio et al describe a laminated structure as discussed above. However, the preceding prior art reference fails to expressly disclose the specific inert protective layer and acid/oxidative treatment.

As to claims 1 and 25-26:

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Araki et al disclose a laminated article (TITLE) formed by laminating a polymeric material (*the layer of an adhesive resin*) onto a substrate (*the metal layer*) (P0182). The polymeric resin is adhesive (ABSTRACT/P0056-0059, 0001, 0018, 0020, 0036-0037) The substrate is a metal such as aluminum (P0187-0190). Araki et al disclose that in order to further enhance adhesive property, metal surfaces may be subjected to chemical conversion treatment with acids (P0193), in particular, a substrate material on which an oxide film is formed by chemical conversion treatment with chromic or phosphoric acid (P0206).

As to claim 27:

Anodic oxidation is also taught (P0192).

In view of the above, it would have been obvious to a person possessing a level of ordinary skill in the pertinent art at the time the invention was made to make or use the specific inert protective layer and oxidative treatment of Araki et al to process the aluminum foil (layer) of Daio et al as Araki et al disclose that in order to further enhance adhesive property, metal surfaces may be subjected to chemical conversion treatment with acids (P0193), in particular, a substrate material on which an oxide film is formed by chemical conversion treatment with chromic or phosphoric acid (P0206). Thus, Araki et al disclose how suitable is to subject metallic layers/foils to acidic treatment to form inert protective layers to enhance adhesive properties. Both references are pertinent to one another as they both confront the same technical problem of improving seal-ability, adhesiveness and mechanical integrity of laminated structures.

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10. Claims 1, 5, 8-9, 14, 16, 25-27 and 30-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over the European publication EP 0895296 (heretofore 'the EP'296') in view of Araki et al 2003/0194564.

As to claims 1, 14, 16 and 30-31:

The EP'296 discloses a sheet-like sealed electrolyte cell having a casing made of a laminated material composed of a metal foil and a resin film (ABSTRACT/P0026). The laminated material comprises a metal foil laminated to a resin film and is fused by heat or bonded by thermal fusion (P0003,0006, 0011). The structure of the laminated material is provided with a metal layer made from Al, first polypropylene layers 1b and an adhesive layer 1d and a carboxylic acid-denatured polypropylene layer 1e in which a carboxylic group is added to propylene (P0028-0029). **Figure 5** illustrates the Al-layer 1a, the polypropylene layers 1b, 1c; the carboxylic-acid denatured polypropylene layer 1e and the dry-laminated adhesive layer 1d (FIGURE 5). *The specific adhesive strength is an inherent characteristic of the adhesive film. The casing of the EP'296 serves the intended use of enclosing, sealing or protecting battery components such as electrode and/or electrolyte.*

1st Examiner's note: *as to the specific preamble reciting "a laminate for sealing an electrolyte or protecting an electrode of a battery", it is pointed out that the preamble still refers to intended use. That is, the claim is directed to a laminate structure per se and the foregoing preamble phrase is only a statement of ultimate intended utility.*

As to claim 5:

The metal layer 1a is made from Al (P0028).

As to claims 8-9:

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The EP'296 discloses carboxylic acid-denatured polypropylene layer 1e in which a carboxylic group is added to propylene, and graft-polymerization (P0028-0029).

The EP'296 describes a laminated structure as discussed above. However, the preceding prior art reference fails to expressly disclose the specific inert protective layer and acid/oxidative treatment.

As to claims 1 and 25-26:

Araki et al disclose a laminated article (TITLE) formed by laminating a polymeric material (*the layer of an adhesive resin*) onto a substrate (*the metal layer*) (P0182). The polymeric resin is adhesive (ABSTRACT/P0056-0059, 0001, 0018, 0020, 0036-0037) The substrate is a metal such as aluminum (P0187-0190). Araki et al disclose that in order to further enhance adhesive property, metal surfaces may be subjected to chemical conversion treatment with acids (P0193), in particular, a substrate material on which an oxide film is formed by chemical conversion treatment with chromic or phosphoric acid (P0206).

As to claim 27:

Anodic oxidation is also taught (P0192).

In view of the above, it would have been obvious to a person possessing a level of ordinary skill in the pertinent art at the time the invention was made to make or use the specific inert protective layer and oxidative treatment of Araki et al to process the aluminum foil (layer) of the EP'296 as Araki et al disclose that in order to further enhance adhesive property, metal surfaces may be subjected to chemical conversion treatment with acids (P0193), in particular, a substrate material on which an oxide film is formed by chemical conversion treatment with chromic or phosphoric acid (P0206). Thus, Araki et al disclose how suitable is to subject metallic

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layers/foils to acidic treatment to form inert protective layers to enhance adhesive properties.

Both references are pertinent to one another as they both confront the same technical problem of improving seal-ability, adhesiveness and mechanical integrity of laminated structures.

11. Claims 1, 5, 8-9, 14, 16 and 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Japanese document JP 11-086808 (herein called "*the JP'808 document*") in view Araki et al 2003/0194564.

The present application is directed to a laminate for sealing a battery electrolyte or electrode wherein the disclosed inventive concept comprises the specific laminate structure.

With reference to claims 1, 14 and 16:

The JP'808 document discloses a sealing bag for nonaqueous electrolyte battery, the sealing bag seals the positive and negative electrodes and the electrolyte (Title/Abstract). *Thus, the layered sealing bag meets the requirement of being a seal film for sealing a battery component such as an electrolyte or an electrode.*

1st Examiner's note: *as to the specific preamble reciting "for use as a seal film for sealing an electrolyte of a battery or as a protective film for protecting an electrode of a battery", it is pointed out that the preamble refers to intended use. That is, the claim is directed to a laminate per se and the foregoing preamble phrase is only a statement of ultimate intended utility.*

2nd Examiner's note: *the limitations: a) "formed by oxidative or acid treatment of said metal layer" and b) "thermally bonded" are being construed as **product-by-process limitation** and therefore, it is contended that the product itself does not depend on the process of making it.*

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Accordingly, in a product-by-process claim, the patentability of a product does not depend on its method of production. (*emphasis added* →) Having shown that the prior art of record comprises the same laminate structure (i.e. the metal layer, the surface treated layer, and the polyolefin layer in the same structural arrangement), it is further noted that the product in the instant claims is the same as or obvious over the product of the prior art.

It is disclosed that the sealing bag is formed with a material stuck together with plastic layers inserted with a metal layer such as aluminum foil and a metal deposition layer, a PET film is stuck thereto and a thermoplastic resin such as polyethylene is also stuck thereto (Abstract/Solution). **Figure 3** below illustrates the specific layered structure of the sealing feature, particularly, the Al foil 9, the plastic layers 11 and the heat seal layers 10.

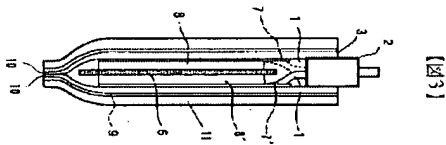


TABLE 1 below shows the specific constitution of sealing bag including: the PET layer, an urethane adhesive, the Al foil, the acid-modified LDPE, and the heat seal layers Y and Z.

【表 1】

封入袋のシート構成	
PET	(12 μm)
ウレタン系接着剤	(5 μm)
アルミ箔	(9 μm)
酸変成LDPE	(20 μm)
ヒートシール層Y	(30 μm)
ヒートシール層Z	(30 μm)

With respect to the surface treated layer: the JP'808 document also discloses that the sealing bag 3 preferably comprises a laminated material comprising a substrate having a metallic vapor deposition layer sandwiched between plastic layers 10 and 11 (SECTIONS 0010-0015). Thus, the substrate itself having the metallic vapor deposition layer acts as the surface-treated layer over the substrate surface. Furthermore, it is also disclosed that the plastic film 11 and the

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metallic foil layer 9 are adhered to each other by using adhesive, such as urethane, epoxy and polyester resins (SECTIONS 0010-0015). *Hence, the foregoing adhesive layer, to some extent, chemically treat the surface of the Al foil or the metallic layer.*

With respect to the layer of an adhesive resin: it is disclosed that the acid-modified LDPE is an acid-modified polyolefin being modified by a carboxylic acid (SECTIONS 0010-0015).

As to claim 5:

The JP'808 document discloses the metal layer is made of aluminum foil (ABSTRACT/SOLUTION).

On the matter of claims 8-9:

It is disclosed that resin composition used for a plastic layer is mainly made of acid-denatured polyethylene or acid-denatured polypropylene (ABSTRACT/SOLUTION). It is disclosed that the acid-modified LDPE is an acid-modified polyolefin being modified by a carboxylic acid (SECTIONS 0010-0015).

The JP'808 document discloses a layered laminate made of a seal film according to the foregoing aspects. However, the JP'808 does not expressly disclose the specific the specific inert protective layer and acid/oxidative treatment.

As to claims 1 and 25-26:

Araki et al disclose a laminated article (TITLE) formed by laminating a polymeric material (*the layer of an adhesive resin*) onto a substrate (*the metal layer*) (P0182). The polymeric resin is adhesive (ABSTRACT/P0056-0059, 0001, 0018, 0020, 0036-0037) The substrate is a metal such as aluminum (P0187-0190). Araki et al disclose that in order to further

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enhance adhesive property, metal surfaces may be subjected to chemical conversion treatment with acids (P0193), in particular, a substrate material on which an oxide film is formed by chemical conversion treatment with chromic or phosphoric acid (P0206).

As to claim 27:

Anodic oxidation is also taught (P0192).

In view of the above, it would have been obvious to a person possessing a level of ordinary skill in the pertinent art at the time the invention was made to make or use the specific inert protective layer and oxidative treatment of Araki et al to process the aluminum foil (layer) of the JP'808 as Araki et al disclose that in order to further enhance adhesive property, metal surfaces may be subjected to chemical conversion treatment with acids (P0193), in particular, a substrate material on which an oxide film is formed by chemical conversion treatment with chromic or phosphoric acid (P0206). Thus, Araki et al disclose how suitable is to subject metallic layers/foils to acidic treatment to form inert protective layers to enhance adhesive properties. Both references are pertinent to one another as they both confront the same technical problem of improving seal-ability, adhesiveness and mechanical integrity of laminated structures.

Response to Arguments

12. Applicant's arguments with respect to foregoing claims have been considered but are moot in view of the new ground(s) of rejection.

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Raymond Alejandro whose telephone number is (571) 272-1282. The examiner can normally be reached on Monday-Thursday (8:00 am - 6:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Raymond Alejandro
Primary Examiner
Art Unit 1745


RAYMOND ALEJANDRO
PRIMARY EXAMINER